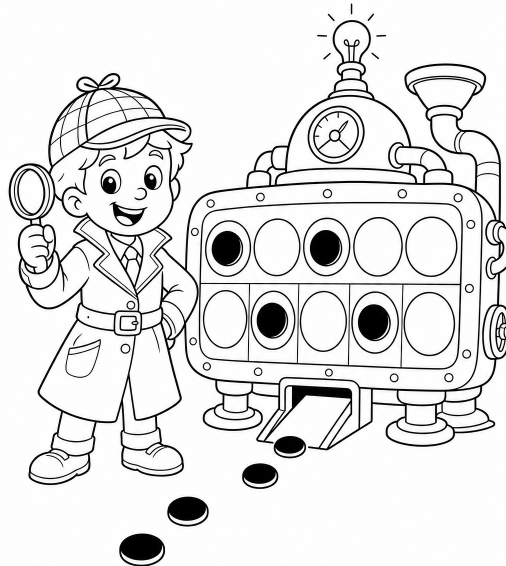


THE TEN MACHINE

The Case of the Jammed Counter



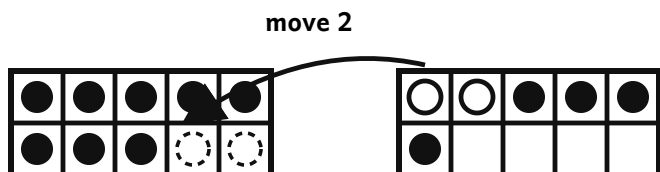
Lead Agent: Penelope

Shortchange Sam jammed Maplewood's counting machine so nobody can add fast anymore. The fix is an old Bureau trick: **make a ten first**. Learn the move, repair the machine — and catch him.

The Machine Runs on Tens

Slow the machine down and watch the move.

THE MOVE



Maplewood's machine loves **full tens**.

To add $8 + 6$, put 8 counters in the first frame and 6 in the second. The first frame has **2 empty spots**, so **slide 2 counters over** to fill it.

Now it's a full **ten** and 4 left behind:
 $10 + 4 = 14$.

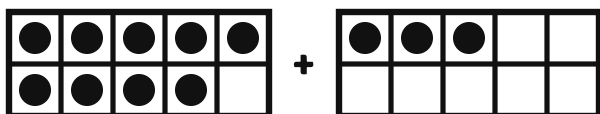
- 1 Warm-up: on the frames above, how many counters did Sam's machine slide over to

make the ten?

And how many were left?

- 2 Your turn. For each one, tell how many counters must **move** to fill the first frame, then the answer.

a.

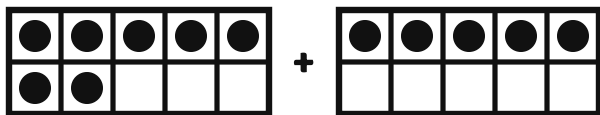


move

→ 10 and

=

b.

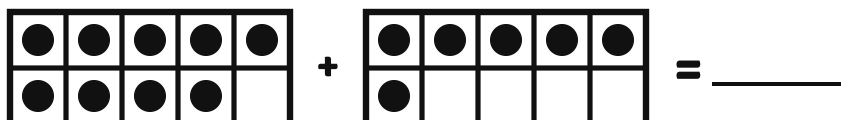


move

→ 10 and

=

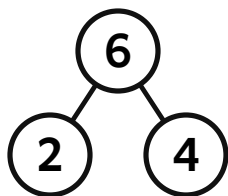
- 3 Detective eye: this frame shows $9 + 6$. Cross out the counters that must move, and finish it. (No boxes this time, Agent — write it yourself.)



The Splitting Trick

You don't need the machine. Draw the split.

THE BOND



split the 6 to feed the 8

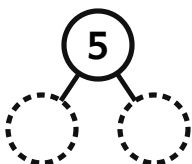
Here is the same move as a picture. To add $8 + 6$, ask: **what does 8 need to reach ten?** It needs 2. So **split the 6** into 2 and 4.

Give the 8 its 2 $\rightarrow$ that makes **10**. Then $10 + 4 = 14$. This is exactly your Dimensions page, “Make the Next Ten.”

- 1 Read the finished bond above. It split the 6 into and . The 8 took the to make 10, then $10 + \text{} = \text{}$.

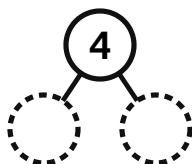
- 2 Fill each bond so the **first number reaches ten**, then finish the fact. The top bubble is the number you are splitting.

a. $8 + 5 \rightarrow$



$10 + \text{} = \text{}$

b. $9 + 4 \rightarrow$



$10 + \text{} = \text{}$

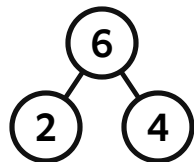
- 3 No help this time. Draw your OWN bond to split the second number, then solve $7 + 6$.

$7 + 6 = \underline{\hspace{2cm}}$

From Picture to Numbers

Now write the split as a number sentence.

WRITE IT DOWN



Under every bond hides a number sentence. The split becomes a **chain**:

$$8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$$

Say it: "I took 2 from the 6 to make ten." Same move, no picture.

- 1 Finish each chain. Split the second number so the first one reaches ten.

a. $8 + 3 = 8 + \square + \square = 10 + \square = \square$

b. $7 + 6 = 7 + \square + \square = 10 + \square = \square$

c. $9 + 7 = 9 + \square + \square = 10 + \square = \square$

- 2 Bureau shortcut: **start at the bigger number**. For $5 + 8$, flip it to start at 8. **Circle the number you start from**, then solve.

$5 + 8 \rightarrow \square + \square + \square = 10 + \square = \square$

- 3 Toughest case, Agent: $9 + 8$. Draw the bond that splits the 8, then write the whole chain yourself.

$9 + 8 = \underline{\hspace{2cm}}$

Machine Speed

The machine is fixed. Now run it fast — no boxes to lean on.

THE HABIT

Every time you add two numbers past ten, run the same three beats in your head:

1. what does the bigger number need to reach ten? · 2. take it from the other number · 3. ten plus what's left.

- 1 Warm the engine — fill the chain (this is the machine's own test): $7 + 5 = 7 + \square +$

$$\square = 10 + \square = \square.$$

- 2 Full speed. Do these in your head with the make-a-ten move — start from the bigger number. Just write the answer.

a. $8 + 7 = \square$ b. $6 + 8 = \square$ c. $9 + 5 = \square$ d. $7 + 8 = \square$

e. $4 + 9 = \square$ f. $8 + 8 = \square$

- 3 Sam boasts: “ $7 + 4$ beats $6 + 5$ because 7 is the biggest number!” Work them both.

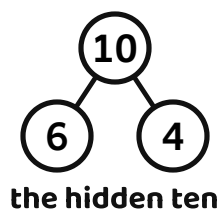
Who's right? $6 + 5 = \square$ $7 + 4 = \square$

What do you notice? _____

Find the Hidden Ten

Three numbers? Grab the two that make a ten *FIRST*.

THE RULE



To add $6 + 4 + 5$, hunt for two numbers that make a **ten**. Here **6 and 4** make ten — snap them together first.

Now it's easy: $10 + 5 = 15$. You can add in any order, so pick the order that makes a ten.

- 1 In the example above, which two numbers made the hidden ten? and

. Then $10 + \text{$ = .

- 2 For each row, **circle the two numbers that make ten**, add them, then add the last one.

a. $7 + 3 + 8 =$ _____

b. $5 + 6 + 5 =$ _____

c. $2 + 9 + 8 =$ _____

- 3 Careful — the biggest number is a trap here. Circle the two that make ten, NOT just the big one, then solve.

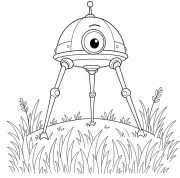
$4 + 9 + 6 =$ _____

Case Closed at the Bakery

Real orders. Make a ten to fill them fast.

Recap of the move: split the smaller number so the bigger one reaches ten, then add what's left to 10.

- 1 The bakery robot baked 8 cookies, then 6 more. Make a ten to count them fast.



$$8 + 6 = 8 + \square + \square = 10 + \square = \square \text{ cookies}$$

- 2 The Martian scout collected 7 shiny stickers, then found 5 more in the machine. How many now?



$$7 + 5 = \underline{\hspace{2cm}} \text{ stickers}$$

- 3 Catch Sam in a lie. He scribbled this on the machine to jam it:



"8 + 5 = 8 + 2 + 5 = 15. Easy!"

Is Sam right? **YES / NO** (circle one) What did he do wrong, and what's the real answer? _____

- 4 Don't over-arrest him! Sam also wrote: "9 + 3 = 9 + 1 + 2 = 10 + 2 = 12." Is THIS one a trick, or did he do it right? **TRICK / OK** (circle one)

CASE CLOSED: the Ten Machine hums again. An agent who can make a ten adds faster than any machine — and can't be fooled by a fake split. Sam is back in the Bureau lock-up. Outstanding work, Agent Penelope!